AMERICAN MUSEUM

NOVITATES

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CITY OF NEW YORK DEC. 9, 1952 NUMBER 1597

THE CHECKERED BEETLES OF NORTH CENTRAL MEXICO (COLEOPTERA, CLERIDAE)

By Patricia Vaurie[1]

INTRODUCTION

A number of recent studies based on the insect material collected by the David Rockefeller Mexican Expedition of the American Museum of Natural History (Spieth, 1950) have confirmed the supposition that most of our southwestern beetle fauna extends southward into northern Mexico, and that many central or southern Mexican forms reach as far north as northern Mexico. Data from the northern area, however, have been lacking heretofore. For instance, Gorham in the "Biologia" (1882, 1886) recorded 112 species of Cleridae from Mexico, many of them without specific localities, but only one from north central Mexico. Although later authors (Wickham and Wolcott, 1912; Schaeffer, 1921; and Barr, 1952a, 1952b) recorded 10 additional species from the north central states, at least 32 others have now been found to occur in this area.

The present study of the Cleridae taken on the Rockefeller expedition (summer of 1947) includes only those species occurring in the four north central states of Coahuila, Chihuahua, Durango, and Zacatecas, with the exception of *Aulicus femoralis* from Sonora. Two of the species are described as new, 11 (including *A. femoralis, A. dentipes,* and nine species of *Cymatodera*) have not been reported previously south of the United States, and the remainder have already been recorded from the United States and Mexico. One species is cosmopolitan. The 46-odd species be-

[1] Assistant, Department of Insects and Spiders, the American Museum of Natural History.

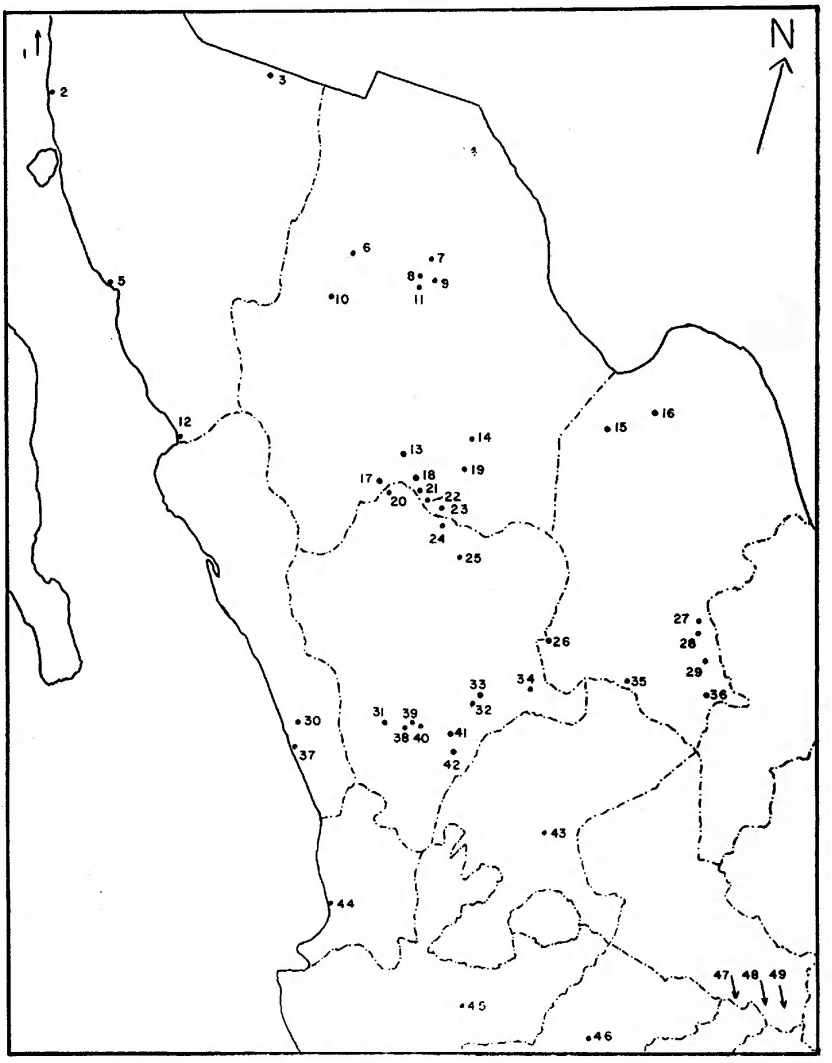


FIG. 1. Map of portion of Mexico showing new localities in which Cleridae were taken.

12	Agiabampo	41	Durango
15	Buena Vista	31	El Salto
35	Cabos	25	Encino
14	Camargo	43	Fresnillo
30	Camino Real de Piaxtla	45	Guadalajara
7	Cañon Prieto	29	Guadalupe, Coahuila
23	Catarinas	48	Guadulupe, D. F.
1	Choya Bay	46	Guanajuato
38	Coyotes	5	Guaymas
34	Cuencame	17	Huejotitlan

long in five subfamilies, the Tillinae, Phyllobaeninae, Clerinae, Enopliinae, and Korynetinae, and in seven genera, *Araeodontia* (two species), *Cymatodera* (15), *Phyllobaenus* (approximately 11), *Aulicus* (five), *Enoclerus* (11), *Pelonides* (one), and *Necrobia* (one).

So far as I can find, there is nothing in the literature about the male genitalia of Cleridae, but I believe that they might well be used in classification. Fourteen species in six genera were dissected in the course of this study, and it was found that the male genitalia of *Necrobia rufipes*, *Pelonides humeralis*, and of an unknown species of *Phyllobaenus* were quite different and different also from those of *Aulicus*, *Enoclerus*, and *Placopterus*. The penis in *Aulicus dentipes* is rather similar to that of some species of *Enoclerus* (*coccineus*, *decussatus*, and *paludatus*), but differs from that of other species of *Enoclerus* (*abdominalis*, *quadrisignatus*, *moestus*, *sphegeus*, and *lecontei*); it is not, however, the same in all the last-mentioned species. No differences could be found between the penis of *Placopterus thoracicus* and *P. cyanipennis* on the one hand and three species of *Enoclerus* (*coccineus*, *decussatus*, and *paludatus*) on the other, and on the basis of this similarity of the male genitalia of these species, as well as on the basis of other characters, I would recommend placing the genus *Placopterus* in synonymy with *Enoclerus*. Unfortunately I have not examined the seven other species of *Placopterus*, including *plumbeus*, the type of the genus.

Since the synonymy of both the genera and the species is listed fully in Wolcott's catalogue (1947) and in Corporaal's recent

---

16	La Babia	2	Puerto Libertad
28	La Gloria	19	Salaices
20	Las Puentes	36	Saltillo
10	Matachic	4	Samalayuca
37	Mazatlan	49	San Angel
47	Mitla	44	San Blas
27	Monclova	6	San José Babícora
3	Naco	33	San Juan del Rio
42	Nombre de Dios	32	San Lucas
24	Ocampo	21	Santa Barbara
22	Ojito	9	Santa Clara
39	Otinapa	11	Santa Clara Canyon
40	Palos Colorados	26	Torreon
18	Parral	13	Valle de Olivos
8	Primavera		

catalogue (1950), it is not repeated in this paper. Wolcott arranges the species alphabetically under each genus, but I have followed Schaeffer's arrangement (1921) of the species in *Aulicus*, Barr's (*in litt.*) in *Cymatodera*, and my own judgment in *Enoclerus*.

The localities under the headings "Recorded Distribution in Mexico" are those given by Gorham in the "Biologia" unless otherwise indicated in parentheses. All new localities from northern Mexico are shown on the map (fig. 1). The new localities in the states of Sinaloa, Nayarit, and Sonora represent insects collected by Mr. and Mrs. George M. Bradt.

ACKNOWLEDGMENTS

I wish to thank Dr. William F. Barr of the University of Idaho for his kindness in giving advice on the status of some species, in identifying all the *Cymatodera*, and in allowing me to use his distributional records for the *Cymatodera* and some other species. Thanks are also extended to Dr. Henry S. Dybas of the Chicago Natural History Museum for comparing some of our specimens with the cotypes of *Phyllobaenus mexicanus* and *P. superbus*, and to Dr. E. A. Chapin of the United States National Museum for his opinion on the new species proposed. The diagram drawings of *Enoclerus* are the work of Miss Marjorie Statham.

KEY TO THE GENERA OF CLERIDAE OF NORTH CENTRAL MEXICO

1. Pronotum rounded on sides, not margined; tarsi five-segmented (first segment often very small, condensed under second, but visible from below); at least one pair of palpi with last segment triangular, dilated.....2
   Pronotum margined on sides; tarsi seemingly four-segmented; all palpi with last segment cylindrical.....6
2. Elytra punctured in regular, well-spaced rows; antennae longer than prothorax, without club.....3
   Elytra irregularly punctured, or granulate, punctures not in rows; antennae not or scarcely longer than prothorax, antennae with definite club.....4
3. Tarsal claws with two inner teeth of unequal size, the innermost shorter and much broader, and placed at base of claw.....*Cymatodera*
   Tarsal claws with two inner teeth of the same size and placed away from the base of the claw.....*Araeodontia*
4. Antennal club seemingly composed of one large ovate segment; antennae very short, not depassing the eye behind; eyes not or scarcely emarginate in front; tibiae not carinate.....*Phyllobaenus*
   Antennal club distinctly three-segmented; antennae either as long as prothorax or at least easily depassing the eye behind; eyes definitely emarginate in front; tibiae often feebly or strongly carinate in center of dorsal side.....5

5. Maxillary and labial palpi with last segment large, dilated, triangular; antennal club loosely formed.....*Aulicus*
   Maxillary palpi with last segment small, cylindrical, labial palpi with it elongate, triangular; antennal club compact.....*Enoclerus*
6. Antennal club compact, not serrate; antennae 11-segmented; elytra punctate-striate.....*Necrobia*
   Antennal club very loose, elongate, deeply serrate within; antennae 10-segmented; elytra with confused punctures.....*Pelonides*

CYMATODERA GRAY

Cymatodera GRAY, 1832, *in* Griffith, Animal kingdom, insects, vol. 1, p. 375.

This New World genus has about 57 species in the United States, 50 in Central America, and seven or eight in South America. Of the 35 species now recorded from Mexico, 15 occur in the north central states, and 11 of these were known previously from the United States only. All the *Cymatodera* specimens examined by me for this paper were identified by William F. Barr for his revision of the genus in the United States.

The shape of the last two abdominal segments (fifth and sixth) in the male, both dorsally and ventrally, are important in the classification of many species.

KEY TO THE SPECIES OF *Cymatodera* IN NORTH CENTRAL MEXICO

1. Body apterous or wings reduced; base of pronotum nearly as broad as base of elytra.....*mitchelli*
   Body winged; base of pronotum only about half as wide as base of elytra..2
2. Color uniformly pale yellow.....3
   Color yellow, with two black elytral bands, or brown or black, with or without pale elytral cross bands.....4
3. Antennal segments 3 and 4 narrower than 5 to 10, 3 to 10 becoming gradually longer to apex.....*pallida*
   Antennal segments 3 to 10 of equal width but becoming gradually shorter towards apex.....*tuta*
4. Fourth antennal segment about three times longer than third, antennae longer than half the body; uniformly brown, no markings....*antennata*
   Fourth antennal segment not or only slightly longer than third, antennae shorter than half the body; brown or black, with or without markings..5
5. Antennal segments 3 and 4 shorter and narrower than segments 5 to 10; size usually smaller, about 6 mm.....6
   Antennal segments 3 to 10 about equal in length; size usually larger, about 8 to 14 mm.....12
6. Elytra with median yellow cross band only.....7
   Elytra with both median and apical yellow cross band (apical band may be a large spot).....10
7. Yellow elytral band not interrupted at suture.....*delicatula*
   Yellow elytral band interrupted by sutural dark stripe.....8

8. Elytral punctures on discal striae only half as wide as the intervals between; male with fifth ventral segment semicircularly emarginate at apex; size larger, 8 to 10 mm. ..... *fuscula* (in part)
   Elytral punctures on discal striae wider than the intervals between; male with fifth ventral segment straight at apex; size smaller, 6 mm. or less... 9
9. Size larger (6 mm.); last ventral segment in male sinuately truncate at apex, in female more or less triangular in shape ..... *aegra*
   Size smaller (4 to 5 mm.); last ventral segment in male feebly, arcuately emarginate at apex, in female semicircularly rounded ..... *werneri*
10. Elytral punctures on discal striae small, only half as wide as the intervals between ..... *fuscula* (in part)
    Elytral punctures on discal striae large, wider than the intervals between . 11
11. Elytra with basal and subapical dark bands not reaching lateral margins; elytra with more yellow than dark color; male with last dorsal segment feebly emarginate at apex ..... *puncticollis*
    Elytra with basal and subapical dark bands reaching lateral margins; elytra usually with more dark than yellow color, or about the same of each; male with last dorsal segment straight at apex ..... *turbata*
12. Elytral suture covered with hairs from base to apex; yellow elytral band distinct, sharply angulate; male with two long, upcurved, widespread spines projecting from apex of last dorsal segment ..... *fuchsii*
    Elytral suture scarcely, if at all, hairy; yellow elytral band, if present, indistinct or not sharply angulate; male with apex of last dorsal segment either straight, emarginate, or bidentate, not spined 13
13. Pronotum scarcely constricted at sides near apex, disc without subapical or subbasal impressions; male with last dorsal segment strongly attenuate, the apex bidentate ..... *snowi*
    Pronotum strongly constricted at sides near apex, disc with subapical and subbasal impressions feeble or strong, but present; male with last dorsal segment not attenuate, the apex straight or emarginate 14
14. Pronotum and elytra conspicuously hairy with both short, depressed, and long, erect hairs, appearing fuzzed to naked eye; male with apex of last ventral segment bisinuately emarginate ..... *neomexicana*
    Pronotum and elytra sparsely, irregularly hairy, appearing shiny to naked eye; male with apex of last ventral segment semicircularly emarginate . 15
15. Elytra with median yellow band distinct, broad; male with apex of last dorsal segment bilobed ..... *belfragei*
    Elytra with median yellow band lacking or much reduced; male with apex of last dorsal segment straight ..... *dietrichi*

Cymatodera aegra Wolcott

Figure 1

Cymatodera aegra Wolcott, 1921, Proc. U. S. Natl. Mus., vol. 59, p. 271, pl. 43, figs. 2–3.

Type Locality: Oracle, Arizona.

New Localities in Mexico: (Three specimens.) *Chihuahua:* 25 miles southwest of Camargo; 42 miles southwest of Camargo.

These are the first records of this species in Mexico. The ground color of the elytra on the specimen 42 miles southwest of Camargo is black, whereas it is brown in the other two specimens. In all three the yellow median cross band is slightly narrower at the suture than the dark area at the base of the elytra. This species is very similar to *C. delicatula* and *C. werneri* that follow, and was taken in one of the same localities as the latter.

Cymatodera delicatula Fall

Cymatodera delicatula FALL, 1906, Canadian Ent., vol. 38, p. 113.

TYPE LOCALITY: Santa Rosa, Baja California.

RECORDED DISTRIBUTION IN MEXICO: *Durango:* Tepehuanes (Wickham and Wolcott). *Baja California:* San Quentin; San Fernando; El Marmol; Catavina; Punta Prieta; San Ignacio; Comondu; San Miguel; Arroyo Seco; La Paz; Triunfo; Miraflores; San Felipe; Santa Rosa; Angel de la Guardia Island (all from Barr, 1950).

No specimens of this species were seen from north central Mexico, but six specimens from southern Arizona and one specimen from the type locality are in the collection of the American Museum. The species is very similar to *C. aegra*, but the elytral band is generally much broader, less angulate, and not interrupted at the suture. In a few specimens, however, the suture is darker than the color of the transverse band and so interrupts the band.

Cymatodera werneri Barr

Cymatodera werneri BARR, 1952, Amer. Mus. Novitates, no. 1572, p. 1.

TYPE LOCALITY: Chisos Mountains, Brewster County, Texas.

RECORDED DISTRIBUTION IN MEXICO: *Chihuahua:* Samalayuca; Kilometer 36 (Ojito Road); 25 miles southwest of Camargo; Valle de Olivos; San José Babícora (all from Barr, 1952a).

This tiny species is similar in general appearance to both *C. aegra* and *C. delicatula* and is difficult to distinguish from them. I have seen five specimens from Mexico and six from Brewster County, Texas, all paratypes. In general, *werneri* is smaller and narrower than either of the other species, and differs from *delicatula* by having the elytral cross band narrower and interrupted at the suture. The Mexican specimens examined, one from each of the localities listed above, as well as the Texas specimens have the elytral band consistently narrow (narrower,

near the suture, than the black area at the base of the elytra), and angulate. The pronotum in all is infuscate, as is also the back of the head. In these characters *werneri* does not differ from the three specimens of *C. aegra* at hand. For comparison with *aegra* and for sexual differences, see Barr (1952a).

Cymatodera puncticollis Bland

Figure 1

Cymatodera puncticollis BLAND, 1863, Proc. Ent. Soc. Philadelphia, vol. 1, p. 356.

TYPE LOCALITY: Western Texas.

RECORDED DISTRIBUTION IN MEXICO: *Baja California:* San Ignacio; Comondu; San Miguel; San Domingo; El Refugio; Venancio; La Paz; Triunfo; Miraflores; San José del Cabo; Cape San Lucas (Barr, 1950).

NEW LOCALITIES IN MEXICO: (Three specimens.) *Coahuila:* La Gloria, south of Monclova; 5 miles north of Saltillo; Tanque de Malone, La Babia (specimen seen by Barr).

In contrast to the three preceding species, *puncticollis* has the apical third or fourth of the elytra yellow, not dark brown or black. In this character it agrees with the following species, *turbata,* which, however, has the extreme apical margin darkened, and more black on the elytra. In Brewster County, Texas, both species have been taken together, but in Mexico *puncticollis* appears to occur farther east (Coahuila) and farther west (Baja California) than *turbata* (Durango, Chihuahua). The above constitute the first records of the occurrence of *puncticollis* in north central Mexico.

Cymatodera turbata Horn

Figure 1

Cymatodera turbata HORN, 1885, Trans. Amer. Ent. Soc., vol. 12, p. 151.

TYPE LOCALITY: Southwestern Texas.

RECORDED DISTRIBUTION IN MEXICO: *Durango:* Tepehuanes (Wickham and Wolcott).

NEW LOCALITIES IN MEXICO: (Six specimens.) *Chihuahua:* Kilometer 36 (Ojito Road), near Santa Barbara; 25 miles southwest of Camargo. *Durango:* Durango; Nombre de Dios.

The infuscate elytral apices are not so dark as the dark elytral bands. The latter vary slightly in width and shape, the front

border of the post median black band being straight in three specimens and angulate in the other three.

Cymatodera pallida Schaeffer

Figure 1

Cymatodera pallida SCHAEFFER, 1908, Jour. New York Ent. Soc., vol. 16, p. 128.

TYPE LOCALITY: Huachuca Mountains, Arizona.

NEW LOCALITY IN MEXICO: (Two specimens.) *Chihuahua:* Eight miles west of Matachic.

This species differs from the five preceding ones by having the elytra virtually entirely pale yellow. Comparing the Mexican specimens with a topotypical individual, I find that they have some slightly darker areas on the elytra, at the base in a vague V formation, and before the apex in a narrow oblique band, but these markings are very faint. This is the first record of this species in Mexico.

Cymatodera fuscula LeConte

Figure 1

Cymatodera fuscula LECONTE, 1852, Ann. Lyc. Nat. Hist. New York, vol. 5, p. 212.

TYPE LOCALITY: Colorado.

RECORDED DISTRIBUTION IN MEXICO: *Vera Cruz:* Jalapa.

NEW LOCALITIES IN MEXICO: (Two specimens.) *Chihuahua:* Catarinas; 25 miles southwest of Camargo.

The Camargo specimen has the pale ante-apical spot and light brown coloration of two specimens from Globe, Arizona, and Christoval, Texas, while the specimen from Catarinas, farther south, lacks the spot and is darker above and below. This specimen agrees with Gorham's dark specimen from Jalapa which he described, along with Texas material, as *texana*. Wolcott, however, in his catalogue (1947) places *texana* as but a variety of *fuscula*.

Cymatodera tuta Wolcott

Figure 1

Cymatodera tuta WOLCOTT, 1910, Field Mus. Nat. Hist., zool. ser., vol. 7, p. 344, pl. 6, figs. 5–6.

TYPE LOCALITY: Escondido, New Mexico.

NEW LOCALITY IN MEXICO: *Coahuila:* Buena Vista, Sierra del Carmen (specimen seen by Barr).

No specimens of this species were collected on the expedition. The above specimen constitutes the first record of the species in Mexico. It is said to be pale yellowish, the elytra with "an irregular fuscous maculation or incomplete fascia at apical two-fifths."

Cymatodera antennata Schaeffer

Figure 1

Cymatodera antennata SCHAEFFER, 1908, Jour. New York Ent. Soc., vol. 16, p. 128.

TYPE LOCALITY: Huachuca Mountains, Arizona.

NEW LOCALITIES IN MEXICO: (Twelve specimens.) *Chihuahua:* Sixty-three miles west of Santa Barbara; Santa Barbara; Kilometer 36 (Ojito Road), near Santa Barbara; 20 miles southwest of Camargo; Huejotitlan; Valle de Olivos. *Sonora:* Naco.

This species is uniformly dark brown, without trace of markings. The second and third antennal segments are very small and together no longer than the fourth segment; the fourth to the tenth segments are noticeably large, broad, and triangularly serrate. The antennae are very long, reaching to or beyond the middle of the body. A large female in the above series is 11 mm. long, but most of the others are about 8 mm. As a group, when compared with a series from southern Arizona, they are slightly darker in color. These are the first records of this species in Mexico.

Cymatodera snowi Wolcott

Figure 1

Cymatodera snowi WOLCOTT, 1910, Field Mus. Nat. Hist., zool. ser., vol. 7, p. 349.

TYPE LOCALITY: San Bernardino Ranch, Cochise County, Arizona.

NEW LOCALITY IN MEXICO: (One specimen.) *Chihuahua:* Eight miles west of Matachic.

Superficially this species resembles the preceding, *antennata*, but it has a faint median band of lighter color on the elytra and the antennae are shorter, reaching only to the base of the prothorax, with the third and fourth segments of about equal length.

The eyes are much narrower and smaller than in *antennata*. The Mexican specimen is a male (11 mm.), with the fifth ventral segment deeply emarginate, the sixth (last) carinate laterally, its apex shallowly emarginate, the last dorsal segment strongly narrowed to the bidentate apex. The pronotum is coarsely and densely punctured as in *antennata* and lacks the surface impressions and strong constrictions of the group of following species.

Cymatodera dietrichi Barr

Cymatodera dietrichi BARR, 1952, Amer. Mus. Novitates, no. 1572, p. 5.

TYPE LOCALITY: Chisos Mountains, Big Bend, Texas.

RECORDED DISTRIBUTION IN MEXICO: *Chihuahua:* Twenty and 25 miles southwest of Camargo; 42 miles southwest of Camargo; Santa Barbara; 63 miles west of Santa Barbara; Catarinas; Primavera; Cañon Prieto, near Primavera; 15 miles east of Parral; Salaices; Valle de Olivos. *Durango:* Nombre de Dios; San Juan del Rio; Encino (all from Barr, 1952a).

This is one of the larger species (up to 14 mm.) and is of the same general color and pattern as *neomexicana* and *belfragei*, also from north central Mexico. It is dark brown, with a narrow pale elytral cross band that is often lacking; in 15 of 27 specimens (paratypes examined from the above Mexican localities) the band is absent. Even when present this band is seldom distinct and is not so broad as in *belfragei*. In five specimens of *dietrichi* from Texas the band is absent in only one specimen. The male has the last ventral segment broadly emarginate at the apex, and the lateral and median carinae distinct. The species occurs also in Arizona and New Mexico.

Cymatodera belfragei Horn

Figure 1

Cymatodera belfragei HORN, 1876, Trans. Amer. Ent. Soc., vol. 5, p. 226, pl. 1, fig. 11.

TYPE LOCALITY: Waco County, Texas.

NEW LOCALITY IN MEXICO: (One specimen.) *Coahuila:* La Gloria, south of Monclova.

This is one of the larger species (above specimen is 11 mm.), about the size of *dietrichi* and *neomexicana*. It is not so hairy as the latter or as *fuchsii*, but in this respect is more like *dietrichi*. It is dark, with a median yellow band across the elytra. The

fifth and sixth ventral segments in the Mexican specimen, a male, are deeply emarginate as in the other species mentioned, but the sixth segment, ventrally, has the lateral carinae less strongly marked than in *dietrichi* or *neomexicana*, and the median carina is absent. Dorsally this last segment lacks the upward-curving spines of *fuchsii*, the apex being merely bilobed. This species has not been reported previously from Mexico.

Cymatodera fuchsii Schaeffer

Figure 1

Cymatodera fuchsii SCHAEFFER, 1904, Jour. New York Ent. Soc., vol. 12, p. 216.

TYPE LOCALITY: Texas.

NEW LOCALITY IN MEXICO: (Twenty-one specimens.) *Chihuahua:* Samalayuca.

This and the following species, *neomexicana*, are very hairy in fresh condition, *fuchsii* especially so. The yellow median band on the elytra is strongly angulate in all but one or two of the Mexican specimens, as it is also in three of four United States specimens (three Arizona, one California). In *neomexicana* the band is much narrower, not angulate, and is less median, more apical, in position. The last ventral segment in *fuchsii* in the male has the apical angles prolonged and turning upward, as has also the last dorsal segment, but in the latter the angles become narrow spines. No other Mexican species has been seen with these long spines.

Wolcott (1947) placed his species *comans*, from Utah, Arizona, and Texas, in synonomy with *fuchsii*. The above series constitute a new record for Mexico.

Cymatodera neomexicana Knull

Figure 1

Cymatodera neomexicana KNULL, 1934, Ent. News, vol. 45, p. 9.

TYPE LOCALITY: New Mexico.

NEW LOCALITIES IN MEXICO: (Five specimens.) *Chihuahua:* Twenty-five miles southwest of Camargo; 63 miles west of Santa Barbara; Kilometer 36 (Ojito Road), near Santa Barbara. *Coahuila:* Cabos; Torreon (specimen seen by Barr).

This species, which has not been recorded previously from Mexico, has, in the male, the median and lateral carinae of the

last ventral segment as in *dietrichi*, but the apex of this segment is bisinuately emarginate, not merely semicircular as in *dietrichi*. The three largest (10 to 13 mm.) of the Mexican specimens are males. The narrow median pale band on the elytra is more distinct in two individuals.

Cymatodera mitchelli Chapin

Figure 1

Cymatodera mitchelli CHAPIN, 1927, Proc. Biol. Soc. Washington, vol. 40, p. 144.

TYPE LOCALITY: Marfa, Texas.

NEW LOCALITY IN MEXICO: *Coahuila:* Buena Vista, Sierra del Carmen (specimen seen by Barr).

As in the four preceding species, this is said to have in the male the apices of both the fifth and last ventral segments emarginate. The last is also tricarinate, as in *dietrichi* and *neomexicana*. The species is apterous, "gray-brown to piceous" in color. Barr's specimen represents the first reported occurrence of the species in Mexico.

ARAEODONTIA BARR

Araeodontia BARR, 1952, Amer. Mus. Novitates, no. 1573, p. 3, figs. 1, 3, 4–7.

This recently erected genus of five species occurs in northern Mexico, Baja California, and the southwestern United States.

Araedontia picta Barr

Araeodontia picta BARR, 1952, Amer. Mus. Novitates, no. 1573, p. 5, fig. 3.

TYPE LOCALITY: Valle de Olivos, Chihuahua.

RECORDED DISTRIBUTION IN MEXICO: *Chihuahua:* Valle de Olivos; 20 miles southwest of Camargo; 63 miles west of Santa Barbara (all from Barr, 1952b).

This species, of which I have seen the type, allotype, and two paratypes, has the head and pronotum yellow, the elytra mostly black, but with four large yellow spots, two in front of the middle, two at the apex. In addition to the genitalic differences given by Barr, this species differs from *A. peninsularis* (Schaeffer) from Baja California and southwestern United States, which may at times resemble it superficially, in its more slender body and in

the fact that the median spots are never broadly joined to the lateral margins of the elytra.

Araeodontia marginalis Barr

Araeodontia marginalis BARR, 1952, Amer. Mus. Novitates, no. 1573, p. 11, figs. 4, 6.

TYPE LOCALITY: Samalayuca, Chihuahua.

RECORDED DISTRIBUTION IN MEXICO: *Chihuahua:* Samalayuca (Barr, 1952b).

This species, of which I have seen the type, differs from the preceding (*picta*) by having the head black, not yellow, and the elytra mostly yellow with piceous stripes on the lateral and sutural margins, the sutural stripe being expanded slightly at the base and apex. Barr states that the elytral pattern of this species is distinctive in the genus. He had a paratype from Pine Springs, Texas.

PHYLLOBAENUS DEJEAN

Phyllobaenus DEJEAN, 1837, Catalogue des coléoptères . . . Dejean, ed. 3 (rev.), p. 127.

This genus as now constituted (Wolcott, 1947) includes *Hydnocera* Newman. It occurs exclusively in the New World in North, Central, and South America. There are 54 species recorded from the United States and about half that number from Mexico, but only two have been reported specifically from north central Mexico.

Although a number of species were taken on the Mexican expedition, it has been found impossible to identify them at the present time. This genus is much in need of revision. There are at least 80 species in the United States and Mexico, no published keys, and the original descriptions were based mostly on color and markings, both of which vary considerably. The species are all small (2 to 5 mm.), of similar general form, and, except for a few with distinctive yellow spots or stripes, they are monotonously black, aeneous, or blue-green, many with vague elytral bands of white hairs. No bicolored species were collected in Mexico. Even Wolcott's own material at the Chicago Natural History Museum shows "many instances of several species lumped under one name in his collection and others where it is evident that one species is split under several names" (Dr. Henry S. Dvbas, *in litt.*).

Phyllobaenus superbus (Wolcott)

Hydnocera superba WOLCOTT, 1911, Ent. News, vol. 22, p. 122.

TYPE LOCALITY: Tepehuanes, Durango.
No specimens could be identified as this species.

Phyllobaenus mexicanus (Wolcott)

Hydnocera mexicana WOLCOTT, 1911, Ent. News, vol. 22, p. 122.

TYPE LOCALITY: Tepehuanes, Durango.
No specimens could be identified as this species.

INDETERMINATE SPECIES OF *Phyllobaenus*

Nine specimens from Palos Colorados, Durango. This series appears generally similar to *subfasciatus* LeConte from the southwestern United States except that the elytral apices are not serrate, and the oblique postmedian elytral band is reddish in ground color, not black, and is more clearly marked. They are 5 to 6 mm. long, with the tibiae and tarsi reddish, the abdomen black.

Two specimens, one from Palos Colorados, and one from San Lucas, Durango. Similar to the above except that the tibiae, tarsi, and ground color under the elytral band are black.

One specimen from Palos Colorados, Durango. This would seem to be *subfasciatus* LeConte if the specimens used for comparison are correctly identified.

Three specimens from Santa Barbara; one from 25 miles southwest of Camargo, both in Chihuahua; one from Guadalupe in Coahuila. These specimens have the finely serrate elytral apices and general appearance of *subfasciatus* LeConte, but the ground color under the elytral band of hairs is reddish, not black, and the band is more clearly marked.

One specimen, Santa Barbara; three, Kilometer 36 (Ojito Road), Santa Barbara, Chihuahua; one, Las Puentes, three, San Lucas, four, Ocampo, all in Durango. These and all the following species have no elytral pattern either of concentrated hairs or of different ground color. The above specimens are greenish in color, about 5 mm. long, and have no serrations on the elytral apices.

One specimen from San José Babícora, Chihuahua, agrees with the above except that it is black, not green.

One specimen from Agua Caliente, Santa Barbara District, Chihuahua, is only 3 mm. long, has the elytra brownish, the pronotum scarcely punctured, the elytral apices not serrate.

One specimen from Palos Colorados, Durango, is 5 mm. long, greenish, the elytral apices strongly serrate.

One specimen from Palos Colorados, Durango, and one from Santa Clara, Chihuahua, have noticeably larger elytral punctures than all the preceding specimens above but seem otherwise superficially similar.

ENOCLERUS GAHAN

Enoclerus GAHAN, 1910, Ann. Mag. Nat. Hist., ser. 8, vol. 5, pp. 62, 65.

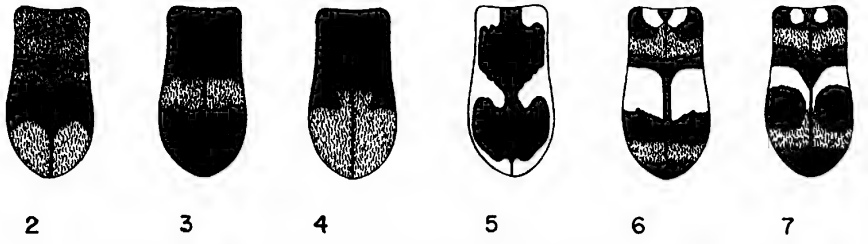
According to Corporaal (1942), 56 species of this New World genus occur in Central America, six in Central and North America, 28 in North America, and 99 in South America. The number of known North American species has since been increased, and nine of the present species from Mexico have been found to occur in the United States. No species has been recorded from the West Indies. Only four of the 11 species here recorded for north central Mexico have been recorded previously from the area.

KEY TO THE SPECIES OF *Enoclerus* IN NORTH CENTRAL MEXICO[1]

1. Elytral band or bands consisting of hairs only, not of different ground color 2
   At least one elytral band of different ground color from rest of elytra 4
2. Abdomen black; elytra with the median band of white hairs, if visible, forming a very narrow zig-zag line ..... *lecontei* (fig. 2)
   Abdomen red; elytra either without median band of white hairs or with band wider, covering at least one-fifth of elytra 3
3. Elytra with wide median band of white hairs ..... *sphegeus* (fig. 3)
   Elytra with wide apical band of white hairs, reaching to near middle of elytra ..... *moestus* (fig. 4)
4. Elytra with the basal, median, and apical orange markings connected on lateral margins ..... *colligatus* (fig. 5)
   Elytra with markings not connected on lateral margins 5
5. Elytra at base with two yellow or red embossed spots each side of scutellum; subapical band composed of hairs only 6
   Elytra at base without any yellow or red embossed spots; subapical band composed of ground color different from surrounding area and with or without hairs 7

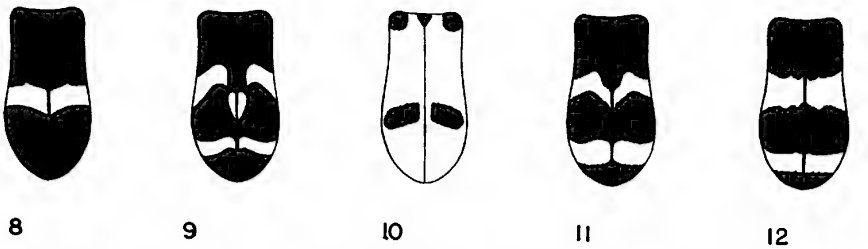
[1] The figures are diagrammatic, showing dark and pale coloration and hairy bands, but not exact size and shape.

6. Elytra with median colored band very broad, transverse, covering middle third or more of elytra, band usually bright red.....*coccineus* (fig. 6)
Elytra with median colored band narrow, lunate, scarcely broader than subapical band of hairs; band yellow.....*laetus* (fig. 7)



FIGS. 2–7. Elytral pattern of *Enoclerus*. 2. *E. lecontei*. 3. *E. sphegeus*. 4. *E. moestus*. 5. *E. colligatus*. 6. *E. coccineus*. 7. *E. laetus*.

7. Elytra metallic blue-green or purple in ground color, with one colored cross band at middle.....*paludatus* (fig. 8)
Elytra red, brown, or black in ground color, with more than one colored cross band (basal black band sometimes broken into humeral spots in *abdominalis*).....8



FIGS. 8–12. Elytral pattern of *Enoclerus*. 8. *E. paludatus*. 9. *E. decussatus*. 10. *E. abdominalis*. 11. *E. bombycinus*. 12. *E. quadrisignatus*.

8. Elytra with common yellow spot on suture between the cross bands.....
.....*decussatus* (fig. 9)
Elytra without any common spot on suture between cross bands.....9
9. Elytra bright red with black basal and postmedian marks.....
.....*abdominalis* (fig. 10)
Elytra dull reddish, or brown, or black, with yellowish cross bands.....10
10. Elytra with median band lunate, strongly angular in front; basal half of elytra with unusually coarse punctures, much larger than pronotal punctures.....*bombycinus* (fig. 11)
Elytra with median band transverse, weakly notched in front; basal half of elytra with punctures small, scarcely larger than those on pronotum...
.....*quadrisignatus* (fig. 12)

Enoclerus abdominalis (Chevrolat)

Figures 1, 10

Clerus abdominalis CHEVROLAT, 1834, Coléoptères du Mexique, fasc. 3, no. 52.

TYPE LOCALITY: Zimapan [Hidalgo].

RECORDED DISTRIBUTION IN MEXICO: *Durango:* Tepehuanes (Wickham and Wolcott). *Hidalgo:* Zimapan.

NEW LOCALITIES IN MEXICO: (Seventeen specimens.) *Chihuahua:* Samalayuca; Primavera. *Durango:* Cuencame.

This large red species with black head and prothorax and black-banded red elytra is easily identifiable. The black basal humeral spots on the elytra in the series of 15 specimens from Samalayuca and in the single individual from Primavera are more or less square, but they may have a notch cut into the basal margin or may extend farther inward towards the suture. In the latter case the spots thus appear more rectangular. The post median black band is rather narrow in six specimens and from one-third to one-half wider in the others; the Primavera specimen is the only one from Chihuahua in which the band covers the lateral margins of the elytra, and in none of the above specimens does the band reach entirely to the suture. In one specimen the band on one side of the elytra is broken to form two spots, the inner one about three times larger than the outer. The Cuencame, Durango, specimen differs from the Chihuahua specimens by having the basal black spots almost united at the suture to form a band, and by having the post median band extending from the lateral margins to, but not including, the suture. In color, the Durango specimen has a yellowish hue, whereas the series from Chihuahua are all blood-red.

The size range in all the specimens is from about 9 to 12 mm. The abdomen is blood-red in all; the rest of the under side is black. The first segment of the antennae, as mentioned by LeConte in his description of "*spinolae*" from the "Mexican Boundary," is red, or at least reddish, not black.

The above differences do not, however, seem to show any geographic variation, since the same type and range of variation, in color, in size, and in the width or length of the elytral band or spots, have been observed in a large comparative series from the southwestern United States, including 107 specimens from Texas (Chisos Mountains, El Paso, Sierra Blanca, Boracho); New Mexico (Alamogordo); Arizona (Santa Catalina and Pinal

Mountains, Dragoon); and one specimen from Crook in northeastern Colorado.

Klug's *zonatus* from Mexico was synonymized by Schenkling (1903) and LeConte's *spinolae* by Wolcott (1947).

This species is often abundant in the flowers of yuccas and related plants in the southwestern United States (Wickham and Wolcott, 1912).

Enoclerus quadrisignatus (Say)

Figures 1, 12

Clerus quadrisignatus SAY, 1835, Boston Jour. Nat. Hist., vol. 1, p. 162.

TYPE LOCALITY: North Carolina.

RECORDED DISTRIBUTION IN MEXICO: *Baja California* (Wickham and Wolcott): San José del Cabo (Horn, Barr); El Marmol; Santa Rosalia; Comondu; San Domingo; San Evaristo; Venancio; Santa Rosa (all reported by Barr). *Sonora* (LeConte).

NEW LOCALITIES IN MEXICO: (Six specimens.) *Chihuahua:* Samalayuca. *Sonora:* Puerto Libertad.

LeConte's three forms, *rufescens* (Colorado), *affiliatus* (Texas), and *latecinctus* (Colorado River and Sonora, Mexico), which were synonymized by Schenkling (1903), represent a few of the many variations in color characteristic of *quadrisignatus*. In the small amount of Mexican material at hand, however, there is not much variability shown, except that one of the five specimens from Samalayuca and the single specimen from Puerto Libertad are pale rufous in color between the pale elytral bands, not dark red brown or piceous as in the others. The same two lighter specimens also have the median band somewhat narrowed at the suture. Comparison with 36 specimens from New Mexico, Arizona, Texas, and southern California shows about the same variations, but also a greater difference in size between the largest individual (12 mm.) and the smallest (7 mm.). The Mexican specimens range in size from 9 to 11 mm. Below they are mostly red, but the legs and often the metasternum are partly infused with piceous or darker coloring.

I have not seen any specimens from the eastern United States, but the species was described from North Carolina, and Wolcott in his catalogue (1947) gives the distribution as Pennsylvania to Georgia west to Kansas, Texas, and Baja California.

This species is similar to *ichneumoneus* Fabricius and has about

the same geographical range as that species, but *ichneumoneus* has the middle pale band on the elytra much broader and the basal elytral tubercles more prominent; in *quadrisignatus* the tubercles are little more than gentle swellings.

According to Wickham and Wolcott (1912, p. 57), this species occurs on yucca in the western United States.

Enoclerus bombycinus (Chevrolat)

Figures 1, 11

Clerus bombycinus CHEVROLAT, 1834, Coléoptères du Mexique, fasc. 1, no. 12.

TYPE LOCALITY: Orizaba.

RECORDED DISTRIBUTION IN MEXICO: *Durango:* Tepehuanes (Wickham and Wolcott). *Guanajuato. Morelos:* Cuernavaca. *Puebla. Vera Cruz:* Jalapa; Orizaba. *Guerrero:* Yolos. Cerro de Plumas and Parada were not located; there is a Parada in San Luis Potosi, in Nuevo Leon, and in Queretaro.

NEW LOCALITIES IN MEXICO: (Thirteen specimens.) *Chihuahua:* Catarinas; Santa Barbara to Ojito, Kilometer 36; Santa Barbara. *Zacatecas:* Fresnillo. *Jalisco:* Guadalajara. *Distrito Federal:* Guadalupe; San Angel. *Oaxaca:* Mitla.

The elytra, especially at the base, are characterized by very large, coarse, dense punctures; the basal swellings are noticeable; the yellowish middle band is angular in front, its borders embossed, or raised above the center; the yellowish subapical band is transverse or oblique (in a specimen from Oaxaca it spreads to the apex of the elytra). The base of the elytra is reddish in all specimens examined, but the space between the two elytral bands is piceous to black in five of the 13 specimens. The head and pronotum are black in ground color, but the head and apical part of the pronotum are covered with dense yellow hairs. Ventrally, the prosternum, mesosternum, and metasternum, often also the hind coxal plates, are black, the abdomen is red, the legs are mostly red, but often infused with piceous. In the color variety described as "*sericans*" the legs are black, and the median band is said to be margined in front with black.

No specimens have been examined from the United States, but Wolcott (1947) says that *bombycinus* occurs in California. It would seem from the present known distribution of the species that California and Chihuahua probably are its northern limits (the Chihuahua localities are near the Durango border).

Gorham (1882) synonymized Spinola's *aenicollis* (Mexico) with *bombycinus*, and Schenkling (1906) synonymized *sericans* (Mexico) of Westwood.

Like *E. coccineus* and *E. laetus*, this species frequents flowers (Wickham and Wolcott).

Enoclerus decussatus (Klug)

Figures 1, 9

Clerus decussatus KLUG, 1842, Abhandl. K. Akad. Wiss., Berlin, year 1840, p. 296.

TYPE LOCALITY: Mexico.

RECORDED DISTRIBUTION IN MEXICO: *Guanajuato. Morelos:* Cuernavaca (Wolcott, 1910). *Oaxaca:* Juquila. Cerro de Plumas [not located]. Milpas [could be Durango, Sinaloa, or Sonora].

NEW LOCALITIES IN MEXICO: (Seventy-three specimens.) *Chihuahua:* Santa Barbara to Ojito, Kilometer 36; Santa Clara. *Durango:* Palos Colorados; 6 miles northeast of El Salto, Durango District; Otinapa; Encino; Coyotes, Durango District. *Jalisco:* Guadalajara.

This is the only species in this area with a common pale mark on the suture behind the median band. It is dimorphic, some specimens having the ground color above entirely black, some having it partially red. It appears to be mainly a Mexican species, although Horn (1885, p. 154) had seen a specimen from Arizona.

In the large series at hand the dark color variety is predominant, being represented by 60 of the 73 specimens. In this color phase, the entire insect is black except for the yellow elytral markings (a narrow arcuate median band, a subapical band, and a spot of varying size and shape between). In the red phase (13 specimens), the prothorax and the basal third of the elytra are red, the rest black except for the yellow elytral markings; in these specimens the black color of the elytra usually extends forward a short way beyond the median band, outlining it in front. The geographical distribution of color phases in *Enoclerus decussatus* from north to south is as follows:

	Pronotum and Base of Elytra	
	Black	Red
Santa Clara, Chihuahua	1	—
Santa Barbara, Chihuahua	6	—
Encino, Durango	2	—
El Salto, Durango	4	4
Coyotes, Durango[a]	1	—
Otinapa, Durango[a]	2	—
Palos Colorados, Durango[a]	44	8
Guadalajara, Jalisco	—	1

[a] These are virtually the same locality.

The above shows no correlation between locality and color. It does show that in north central Mexico black specimens appear to be more common than red, which is the opposite of Gorham's statement (1882, p. 155) that the elytra were black at the base in two of his specimens from Milpas, but red "as usual" in the other specimen. Spinola's figure, however, of "*hopfneri*" from Mexico is also red, including the head; Klug's *decussatus* was the red phase, as was Wolcott's (1910) specimen from Cuernavaca in Morelos. Horn's Arizona specimen (*loc. cit.*) was entirely black. These, of course, are merely isolated records. Unfortunately, no specimens from the United States are available for comparison, and no adequate series have been recorded from more southern Mexico. It is possible that the red phase is more common southward, as indicated by Gorham, but that these phases represent subspecies is doubtful, such color variations being "quite common" in this genus, according to Horn.

The lunate yellow median band is usually interrupted at the suture and turns backward towards the apex of the elytra; its hind margin may be joined to the common triangular spot or be either narrowly or widely separated from it. In the Palos Colorados series the median band joins the spot, at least on one side, in but four of the 54 specimens, although it comes much closer in some individuals than in others. The center spot varies in size and is not always triangular in shape; in a red specimen from El Salto it is a small oval, in another it is larger and heart shaped; in a black individual from Santa Barbara and in two specimens from Palos Colorados it is in the form of a narrow-sided V. Each half of the median band is usually pinched or narrowed in the center, but in some the band is the same width throughout, and in five specimens from Palos Colorados it is so narrowed as to

be completely interrupted and thus forms two yellow spots on each elytron. The size range is from 6 to 10 mm.

Spinola's *hopfneri* (Mexico) is listed by Wolcott (1947) as a synonym.

Enoclerus laetus (Klug)

Figures 1, 7

Clerus laetus KLUG, 1842, Abhandl. K. Akad. Wiss., Berlin, year 1840, p. 301.

TYPE LOCALITY: Mexico.

RECORDED DISTRIBUTION IN MEXICO: No specific localities.

NEW LOCALITIES IN MEXICO: (Two specimens.) *Coahuila:* Cabos; Guadalupe.

This species and *E. coccineus* are the only ones in north central Mexico with round embossed pale scutellar marks at the base of the elytra. *E. laetus* is in fact very similar to the latter, and both species are highly variable in color. In general, however, *coccineus* has a very broad, straight, bright red band across the elytra, whereas *laetus* has a narrow, arcuate, yellowish band. The two Mexican specimens of *laetus* have the band as just stated; they have the rest of the elytra black except for the subapical band of white hairs and the white hairs basally; the pronotum red with traces of black; the head red at the extreme base, but the rest black; clypeus and antennae red; the ventral surface and legs black. They are 6 to 7 mm. in length. These specimens agree in coloration with 12 specimens from Arizona and California, some of which, however, have a greater amount of red on the head. Three individuals from St. George, Utah, and a series of 21 from Victoria, Texas, and two from Rio Grande City, Texas, differ in having the legs and the entire head red, and a single specimen from the Huachuca Mountains, Arizona, has the head and pronotum entirely black, a coloration which Wolcott (1909, p. 98) found typical of Texas specimens. This author said that the typical form had the head, pronotum, and legs red as in the specimens before me from Texas. His red specimens were from Arizona, where evidently both types occur.

Wolcott synonymized LeConte's *abruptus* (Eagle Pass, Texas) in 1922 (p. 75). He also gave in this paper an account of the similarities and differences between *laetus* and *coccineus*, with mention of other more southern species that possess the two basal elytral maculations.

Wickham and Wolcott (1912) call *laetus* a "flower loving species, feeding exposed and easily frightened."

Enoclerus coccineus (Schenkling)

Figures 1, 6

Clerus coccineus SCHENKLING, 1906, Deutsche Ent. Zeitschr., p. 272, pl. 2, fig. 7.

TYPE LOCALITY: "Nord-Mexiko (Tsuque)."

NEW LOCALITY IN MEXICO: (Five specimens.) *Chihuahua:* Samalayuca.

This species has a broad, red, sometimes yellowish, median band as in *ichneumoneus*, but it has two embossed basal elytral spots not present in any other species in this area except *laetus*. The synonym *corallinus* Fall from Santa Fe, New Mexico, has, in fact, often been confused with *laetus* (probably those specimens with the median band less red and less wide). The median band in *coccineus* covers a third or more of the elytra, whereas in *laetus* it is almost as narrow as the subapical band of white hairs.

The five specimens from northern Chihuahua have the prothorax red; the head is red in four and black in one; all are black below. The elytral markings are red in four, yellow in one. In the latter specimen the median band is straight on its front margin, but in the others it presents varying degrees of arcuateness; the band is broad in all.

Comparison with 45 specimens from Texas, New Mexico, Colorado, and Arizona shows the same type of variation, eight of the 45 having the head wholly or in part black, nine having the elytral markings yellow instead of red. In addition, a specimen from Navajo County, Arizona, and two of 13 specimens from Gallup, New Mexico, have the prothorax black instead of red.

Like *E. laetus*, this species is found on flowers.

Enoclerus paludatus, new species

Figures 1, 8

Small to medium; elytra metallic blue, greenish blue, or purple, with a transverse median orange or yellow fascia prolonged on the suture halfway or all the way to apex; head black, pronotum and abdomen either black or red, the rest black.

DESCRIPTION OF HOLOTYPE, MALE: Head, including eyes, about as wide as pronotum at widest part, densely punctured;

front, between the eyes, with a longitudinal ridge and a feeble depression on each side of ridge; finely, sparsely punctured. Antennae as long as head and prothorax. Pronotum red, slightly wider than long, scarcely narrowed at base, which is almost as wide as greatest width of pronotum, with broad, shallow, semicircular depression near apex and a narrow, deep, transverse depression at base. Elytra greenish blue, with an orange transverse fascia near middle, the edges of the fascia slightly irregular, base of elytra about a fourth broader than base of pronotum, about three times longer than pronotum, disc coarsely, rugosely punctured. Below, abdomen red, sparsely punctured, the rest, including legs, densely punctured. Tibiae on inner side at middle with carinae distinct and prominent. Last (sixth) ventral segment truncate at apex, only a third as long as fifth segment; last dorsal segment rounded. Pubescence on head and pronotum erect, long, black and white; on elytra mostly white, long, some hairs erect, some reclining. Length: 7 mm. (with head bent downward).

Male Genitalia: Penis lightly chitinized, rather transparent, curved, depressed, slightly concave ventrally, slightly wider towards apex where narrowed to two sharp points (points usually contiguous).

Description of Allotype, Female: Similar to male, but differs in having the elytra purple, the pronotum infuscate at apex, and the last ventral segment rounded at apex, almost as long as preceding segment. Length: 5 mm. (with head bent downward).

Type Material: Holotype, male, Palos Colorados, Durango, Mexico, 8000 feet, August 5, 1947; C. Michener, collector; allotype, female, and 14 paratypes, same locality and date, various collectors. Holotype, allotype, and 12 paratypes in the collection of the American Museum of Natural History, one paratype in the United States National Museum, and one in the collection of William F. Barr, University of Idaho.

Discussion: This dimorphic species has the pronotum and abdomen black in nine specimens (four males, five females) and red in seven (four males, three females). At first glance it might be thought a member of the genus *Aulicus* because of its blue and orange coloring, but only one pair of palpi (labial) is large and triangularly dilated. In its metallic elytral coloration, square-appearing pronotum, and male genitalia, it seems closest to

Placopterus cyanipennis (Mexico), a species which, with *P. thoracicus*, I cannot separate satisfactorily from the genus *Enoclerus*. The pronotum in these two latter species is slightly wider, more transverse than in *Enoclerus*, and the tibiae lack evident carinae, but some *Enoclerus* (*lecontei*, *moestus*, and *sphegeus*) also appear to lack the tibial carinae, and there is considerable diversity in the shape of the pronotum within *Enoclerus*. Both *E. paludatus* and *P. cyanipennis* have the labrum scarcely, if at all, emarginate, but *P. thoracicus* and all the *Enoclerus* examined have it deeply emarginate, almost bilobed in some species. *E. paludatus* differs further from *P. cyanipennis* in having an elytral fascia. The male genitalia are almost identical with those of *E. coccineus*, *E. decussatus*, *P. cyanipennis*, and *P. thoracicus*.

Two South American species, *E. bellus* and *E. arrowi*, have the coloring and median fascia about as in *paludatus*, but the former has the entire under side and legs red and the band broader, and the latter is said to have the metasternum red and the fascia oblique.

In addition to the variation in color of pronotum and abdomen mentioned above, two of the male paratypes have the short last ventral segment reddish instead of black; four specimens, including the allotype, have the elytra purple; the rest have it greenish blue, or blue, depending on how the light strikes. The elytral band varies somewhat in width, but usually comprises between one-fourth and one-fifth of the length of the elytra. In most specimens the front and rear margins of the band are virtually straight, but in three or four specimens the margins are sinuous and the band becomes narrower at the elytral margins. The band is usually slightly antemedian but may be median. The species varies in size from 5 to 8 mm.

Enoclerus colligatus, new species

Figures 1, 5

Medium; entirely black except for three incomplete orange fasciae at base, middle, and apex of the elytra, these markings connected along the lateral margins from base to apex, and reddish tarsi, basal antennal segments, and antennal club. Elytra appear bluish in daylight.

DESCRIPTION OF HOLOTYPE, FEMALE: Head, including eyes, slightly narrower than pronotum at widest part, densely punctured, with slight irregular depression between the eyes. Antennae shorter than head and prothorax. Pronotum as wide as long, though appearing longer than wide, narrowed towards the base which is more than half of the greatest width of the pronotum, with broad, shallow, V-shaped depression near apex, and narrow, deep, transverse depression at base; finely, sparsely, regularly punctured. Elytra trifasciate as in figure 5, the basal and median bands interrupted before the suture, the apical band reaching the suture, and all confluent on the lateral margins, at base twice as broad as pronotum at base, about two and one-quarter times longer than pronotum, disc finely, rugosely punctured, the punctures becoming less visible towards apex, and larger and more distinct on the sides at middle. Below, punctures dense, as on head. Tibiae on inner side at middle with carinae distinct, but not prominent. Last dorsal and ventral segments broadly rounded. Pubescence on head and pronotum more or less erect, mostly black and long; on elytra, in black areas, short, white, reclining, interspersed with long, black, erect hairs; in orange areas mostly black, short, erect, and longer in basal area. Length: 7 mm. (with head bent downward).

TYPE MATERIAL: Holotype, female, San Lucas, Durango, Mexico, 6700 feet, August 2, 1947; M. Cazier, collector, deposited in the collection of the American Museum of Natural History.

DISCUSSION: This colorful beetle has an elytral pattern more characteristic of a typical cicindelid than of *Enoclerus*. The only other species of *Enoclerus* that I know with three fasciae connected on the elytral margins from base to apex is *E. chapini* (Arizona) which, however, is said to have an ivory-colored spot at the base of each elytron as in *E. coccineus* and *E. laetus*, and the abdominal segments and elytral suture red. *E. cordifer* from the southwestern United States has the elytral margins reddish from base to near apex, but it has no basal or apical fasciae and has four characteristic black spots surrounding the inner edges of the incomplete median fascia.

Unless additional specimens should show considerable variation in elytral markings, this new species is quite distinctive in pattern. San Lucas is in southeastern Durango.

Enoclerus lecontei (Wolcott)

Figures 1, 2

Clerus lecontei WOLCOTT, 1910, Field Mus. Nat. Hist., zool. ser., vol. 10, p. 359.

TYPE LOCALITY: "East of Fort Colville and in Bitter Root Valley."

RECORDED DISTRIBUTION IN MEXICO: *Hidalgo:* Yolotepec.

NEW LOCALITIES IN MEXICO: (Three specimens.) *Chihuahua:* Santa Clara; Cañon Prieto, Santa Clara Canyon.

This species and *moestus* and *sphegeus* are all blackish, with bands of whitish hairs. The last two are generally very much larger (*lecontei* is about 7 to 9 mm.) and have more prominent tubercles at the base of the elytra. Furthermore, *sphegeus* has a wide median white band, *moestus* has a wide apical band covering nearly half of the elytra, and both have the abdomen red, not black as in *lecontei*.

In the above three piceous specimens from Mexico the apex and base of the pronotum and the base of the elytra are seen to be reddish when viewed under a lighted microscope. Examination of additional specimens (60) from Arizona, California, New Mexico, Oregon, Washington, Colorado, and Nebraska shows that this border of color is not invariably present. The Mexican specimens are otherwise similar to specimens from farther north in the black ventral surface with the tibiae somewhat infused with red, and in the arrangement of the white hairs on the elytra. The hairs, of course, vary with the amount of wear to which the insect has been subjected. The narrow, median, zig-zag line of hairs is indicated but interrupted in the Santa Clara specimens and is obliterated in the Cañon Prieto specimen except at the lateral margins of the elytra.

Wickham and Wolcott (1912) found *lecontei* "common running in the sunshine on the trunks of cut pines and other conifers, and frequently seen in lumber yards and about saw mills."

This species was described by LeConte as *Thanasimus nigriventris*, a name preoccupied in *Enoclerus*.

Enoclerus moestus (Klug)

Figures 1, 4

Clerus moestus KLUG, 1842, Abhandl. K. Akad. Wiss., Berlin, year 1840, p. 298.

TYPE LOCALITY: Mexico.

RECORDED DISTRIBUTION IN MEXICO: No specified localities; not mentioned in the "Biologia."

NEW LOCALITIES IN MEXICO: (Six specimens.) *Chihuahua:* Eight miles west of Matachic; Santa Clara, Namiquipa District. *Durango:* Palos Colorados; 6 miles northeast of El Salto, Durango District.

This species lacks the median band present in *sphegeus* and lacks the basal band present in *lecontei*, but it has an apical band reaching to near the middle of the elytra. The Mexican specimens are all about the same size (10 to 11 mm.), with prominent elytral tubercles, uniformly black, with the abdomen alone red, and the apical half of the elytra with its characteristic band of whitish hairs sharply cut out at right angles on the lateral margins. The head is thickly covered with long yellowish hairs.

In some United States specimens examined, the elytral tubercles are scarcely evident, but this may be due to wear, as the specimens concerned also have a good deal of their hairs rubbed off. A few of these specimens are very much smaller (8 mm.) than those in my Mexican series. Except for varying stages of wear, the more northern individuals agree with the Mexican ones. I have seen specimens from Arizona, California, British Columbia, Nebraska, and South Dakota. Wickham and Wolcott record *moestus* also from Colorado, New Mexico, Wyoming, Montana, Washington, and Oregon, a distribution rather similar to that of *sphegeus* and *lecontei*, which are closely related species occurring also on cut pines and conifers.

LeConte's *truncatus* from Santa Fe, New Mexico, was made a synonym by Schenkling (1903).

Enoclerus sphegeus (Fabricius)

Figures 1, 3

Clerus sphegeus FABRICIUS, 1787, Mantissa insectorum, vol. 1, p. 125.

TYPE LOCALITY: "America boreali."

RECORDED DISTRIBUTION IN MEXICO: *Chihuahua:* Pinos Altos. *Guanajuato. Puebla:* Chalchicomula.

NEW LOCALITY IN MEXICO: (One specimen.) *Durango:* Six miles northeast of El Salto, Durango District.

The broad median band of dense white hairs differentiates *sphegeus* from both *moestus* and *lecontei*. In fresh individuals an apical band of the same width is also visible, but the hairs

are much sparser. The single specimen from southern Durango has the femora and tibiae red as in seven specimens from southern Arizona (Webber's Cabin and Sabino Basin), not black as in two specimens from northern Arizona (Flagstaff) and in 42 other specimens from other western states. Klug's "*arachnodes*" from Mexico and the specimens seen by Gorham from Guanajuato and Chalchicomula also had red legs. The Durango and southern Arizona specimens also have the elytral hairs, except in the median white band, coppery or russet colored, instead of black. There may be two subspecies indicated here, but additional specimens from Arizona and Mexico, as well as from New Mexico, should be examined.

My Mexican specimen is only about half of the size of the majority of specimens examined from the United States, being more the size of *E. lecontei* (7 to 9 mm.).

The habits of this species are similar to those of *lecontei* and *moestus*.

Gorham (1882, p. 150) synonymized *sobrius* Walker from Vancouver Island and *arachnodes* Klug from Mexico.

AULICUS SPINOLA

Aulicus SPINOLA, 1844, Essai monographique . . . clérites, vol. 1, p. 328.

The species of this genus occur in the New World only, three in Cuba and the other 12 in the southwestern United States and Mexico. Four of the 10 species known to occur in Mexico have been taken in the north central area.

The only life history observations recorded for any of the species of this genus are those made by Linsley (1936) for *A. terrestris*. This species lives upon the ground, colonies having been found on rather barren hillsides. Its larvae "apparently feed upon the egg masses of a lubber grasshopper, and the adults prey upon the larvae of certain moths" (Linsley, p. 258).

KEY TO THE SPECIES OF *Aulicus* IN NORTH CENTRAL MEXICO

1. Entire under surface and legs black (abdomen may be just perceptibly margined with red) . . . . . *nigriventris*
   Under surface partially red either on under side of head, center or apex of abdomen, or sides broadly 2
2. Each elytron with yellow (or red) shoulder mark the same width as, or narrower than, the common sutural blue vitta; elytral disc usually coarsely punctured; small black shoulder spot generally present . . . . . *femoralis*

Each elytron with yellow (or red) shoulder mark one and one-half or more times broader than common sutural blue vitra; elytral disc usually finely or weakly punctured; small black shoulder spot always absent.....3

3. Head black above and below; sides and apex of abdomen broadly red; male with all tarsal claws dentate; female with last dorsal segment bilobed or emarginate.....*dentipes*

Head red above and on sides below; color of abdomen variable; male with all tarsal claws simple, not dentate; female with last dorsal segment broadly rounded.....*monticola*

Aulicus monticola Gorham

Figure 1

Aulicus monticola GORHAM, 1882, Biologia Centrali-Americana, vol. 3, pt. 2, p. 146, pl. 8, fig. 18.

TYPE LOCALITY: Mexico.

RECORDED DISTRIBUTION IN MEXICO: *Guanajuato:* Guanajuato; Tupataro.

NEW LOCALITIES IN MEXICO: (Four specimens.) *Chihuahua:* Salaices. *Coahuila:* Guadalupe.

This and the following species of the genus are very similar in the color pattern of the elytra, and there are also other United States species which may yet be found to occur in Mexico, which are also similar in pattern. In at least one species, *femoralis*, the head, pronotum, and under side have all been found to vary individually in color, and perhaps more specimens of the other species will reveal similar variations. The only constant criterion for distinguishing these species by the elytral pattern is that used in the key, namely, the relative width of the basal sutural blue vitta to the yellow humeral marks on either side. In *A. monticola* and *dentipes* the blue vitta is very narrow or even obsolete; in *A. femoralis* and *nigriventris* it is the same width or wider than the humeral marks.

The above new northern Mexico localities help fill in the distribution of this species, known hitherto from south central Mexico and from the southwestern United States (Alpine, Texas; Nogales and the Santa Rita Mountains, Arizona). Salaices is near Camargo in southeastern Chihuahua, and Guadalupe is in southeastern Coahuila. I have no United States specimens with which to compare these Mexican ones; the two individuals from Salaices are larger (12 to 14 mm.), the others being about 10 mm. The head is red, the pronotum red, with a central vitta, and the base and apex are black; the elytra are red, with very broad blue

areas near base and at apical third. The blue sutural vitta is lacking from the base of the elytra in one of the Guadalupe specimens, and in both specimens from this locality the suture between the submedian and the apical blue bands is only narrowly blue, whereas this part is broadly blue in the other two specimens. In one specimen from Salaices the submedian blue band does not quite reach the last stria on the reflexed elytral margins as it does in the other specimens. Ventrally, two specimens have the last abdominal segment and part of the next to last red; one specimen has only the last segment red; and one has no red visible on the abdomen.

In regard to the color of the abdomen, there seems to be some disagreement in the literature. I have not seen the type, but Gorham states that his species has the abdomen red before the apex ("abdomine ante apiceum rufo"). Wolcott (1910, p. 364) said the typical form had the "abdomen (the apex excepted) red," but that his specimen from Alpine, Texas, had it black, the last segment alone being red. Schaeffer (1921) and Linsley (1936), however, mention no specimens with red abdomens, but only those "narrowly margined with red," or with "last ventral segment red, penultimate segment red at sides." No doubt there is much variation in the coloration below.

The apex of the last dorsal segment is subtruncate in the male, not emarginate as in *Aulicus femoralis*, *A. nigriventris*, and *A. dentipes*, broadly rounded in the female, as in *femoralis*. The tarsal claws in both sexes are simple.

Wickham and Wolcott (1912) found this species resting on the stems of tall grasses.

Aulicus femoralis Schaeffer

Figure 1

Aulicus femoralis SCHAEFFER, 1917, Jour. New York Ent. Soc., vol. 25, p. 132.

TYPE LOCALITY: Nogales, Arizona.

NEW LOCALITY IN MEXICO: (One specimen.) *Sonora:* Guaymas.

Although Guaymas is on the coast of Sonora and is not in the north central area of Mexico covered in this paper, I am including this species since it has not before been recorded from south of Arizona and Texas. Schaeffer had seen it from southern Arizona, and Linsley (1936) from Hardeman County, Texas, and I have examined 13 specimens from southern Arizona.

My Mexican specimen agrees in coloration with seven of the Arizona specimens except for the obsolete black median band of the pronotum; it has the head, most of the pronotum, the ventral side, and most of the legs red, and the front and hind margins of the pronotum, the tarsi, tibiae, and apex of the femora black. Schaeffer calls this the typical form. The six other Arizona specimens are darker, having the head, pronotum, ventral side, and legs black, the abdomen red with the apex black. The elytra in all the Arizona specimens, as well as in the Mexican, have the lateral margin yellow between the yellow humeral spot and the yellow sub-median band. In the Mexican specimen, however, the sub-median mark is reduced to a round spot on each elytron, disconnected from the margins of the elytra. This tendency, for the band to draw away from the margin, can be seen in a number of the Arizona series. The tiny black humeral spot, which Schaeffer states may or may not be present in this species, is present in the Mexican specimen, and is present also, sometimes only faintly, in all but four of the 13 Arizona specimens at hand. The Mexican specimen is 9 mm. long, as is one from Tucson, but the others are smaller.

In this species the last dorsal segment is emarginate at the apex in the male, rounded in the female. Both Schaeffer and Linsley state that the male has the inner claw of the front and middle tarsi cleft or dentate, but in my examination of three males I could not verify this statement.

Aulicus nigriventris Schaeffer

Aulicus nigriventris SCHAEFFER, 1921, Proc. U. S. Natl. Mus., vol. 59, p. 156.

TYPE LOCALITY: Mexico.

RECORDED DISTRIBUTION IN MEXICO: *Coahuila:* Torreon (Schaeffer).

No Mexican specimens of this species have been examined by me, but I have seen a female (9 mm.) from Cochise County, Arizona. In this species the female has the last dorsal segment truncate, not broadly rounded as in *A. femoralis* and *monticola*, or emarginate as in *dentipes*. The male has this segment "subtriangularly emarginate" (Schaeffer), somewhat as in the male of *femoralis* and *dentipes*. All the claws of both sexes are said to be simple, as is also true in *monticola*. *A. nigriventris* is very similar in dorsal coloration to the dark phase of *femoralis*, even to the

presence of the tiny black humeral spot. Its size range is from 8 to 10 mm., that of *femoralis* generally 6 to 8 mm. (one specimen, 9 mm.).

Aulicus dentipes Schaeffer

Figure 1

Aulicus dentipes SCHAEFFER, 1921, Proc. U. S. Natl. Mus., vol. 59, p. 157.

TYPE LOCALITY: San Diego, Texas.

NEW LOCALITIES IN MEXICO: (Thirty-two specimens.) *Coahuila:* Guadalupe; La Gloria, south of Monclova.

These specimens constitute the first record for this species in Mexico; the two localities are in southeastern Coahuila. Linsley (1936, p. 255) says that this is "apparently one of the...most abundant and widespread species" of *Aulicus*, and I have more specimens of it from Mexico than of other species of the genus. I have seen but one specimen from the United States, however, from near Fort Davis, Texas. It matches some of the larger Mexican specimens, being 10 mm. long, whereas most of the latter are about 8 mm. Schaeffer had seen about 30 specimens from various localities in Texas, New Mexico, Arizona, and California.

This species has two characters unusual in the genus: the male has both tarsal claws on all the tarsi dentate, and the female has the apex of the last dorsal segment emarginate. In some species the male has one of the claws dentate or the claws dentate on the front and middle tarsi only; in other species of the genus the female has the last dorsal segment rounded or truncate at the apex. The male of *dentipes* has the last dorsal slightly emarginate, not so broadly as it is said to be in *nigriventris*, but more as in the male of *femoralis*.

Of the Mexican specimens, 31 are from Guadalupe; only one is from La Gloria. They all have the abdomen black, with the sides and apex red and the rest of the ventral surface and the head and pronotum black. The elytra are yellow, with dark metallic blue, green, or vaguely purple markings, which appear nearly black at certain angles. The elytra have a blue cross band at the apical third, a blue submedian band that does not attain the lateral margins, and a narrow blue sutural vitta extending forward from the submedian band. This sutural vitta is generally narrowed at the base of the elytra, but in nine of 17 males and in five of 15 females its margins are parallel; in one female the vitta is even

broader at the base. The submedian cross band varies in both width and length, sometimes reaching only halfway to the lateral margins, but none of the specimens has this band reduced to a spot, as mentioned by Schaeffer. In a large female the band is very large, being broader than the apical band.

PELONIDES KUWERT

Pelonides KUWERT, 1894, Ann. Soc. Ent. Belgique, vol. 38, p. 8.

This New World genus consists of but six species, one known from Baja California only, two occurring in both the United States and Mexico, and three known from the United States only.

Pelonides humeralis (Horn)

Figure 1

Enoplium humerale HORN, 1868, Trans. Amer. Ent. Soc., vol. 2, p. 135.

TYPE LOCALITY: New Mexico.

RECORDED DISTRIBUTION IN MEXICO: Jolos.

NEW LOCALITIES IN MEXICO: (Two specimens.) *Chihuahua:* Two miles west of Matachic; Santa Barbara.

These are both dark specimens of this variably colored species, one having the elytra entirely black (female from Matachic), the other (a male) having them all black except for a narrow yellow stripe on the lateral margins from the base to apical fourth. Two females examined from the Pinal Mountains and Globe, Arizona, are colored like these two specimens, but 11 other specimens from Arizona (Globe, Pinal Mountains, Grand Canyon) have the elytra from one-half to three-quarters yellow basally, one Globe specimen having them entirely yellow. A female from Douglas, Arizona, is about like the Santa Barbara male in coloration. All the above-mentioned specimens have the pronotum yellow on the sides, black down the center.

Chevrolat's *militaris* from Jolos, [Guerrero?], Mexico, was placed in synonymy by Schenkling (1910).

NECROBIA OLIVIER

Necrobia OLIVIER, 1795, Entomologie, ou l'histoire naturelle des insectes, ... coléoptères, vol. 4, p. 5.

There are 11 species in this genus, three of which are cosmopolitan, the so-called bone beetles. Of the five species that have

been reported from the New World, only two have been recorded from Mexico, and one of these is from north central Mexico.

Necrobia rufipes (De Geer)

Figure 1

Clerus rufipes De Geer, 1775, Mémoires pour servir à l'histoire des insectes, vol. 5, p. 165, pl. 15, fig. 4.

Type Locality: "Suriname" [Dutch Guiana].

Recorded Distribution in Mexico: *Durango* or *Chihuahua:* Presidio. *Guanajuato. San Luis Potosi. Vera Cruz:* Vera Cruz; Orizaba; Cordoba. *Oaxaca. Baja California* (Barr): Guadalupe Island; San Felipe; Cedros Island.

New Localities in Mexico: (Fifty-three specimens.) *Chihuahua:* Catarinas. *Coahuila:* Monclova. *Sonora:* Guaymas; Puerto Libertad; Choya Bay; Agiabampo. *Sinaloa:* Camino Real de Piaxtla; Mazatlan. *Nayarit:* San Blas. *Jalisco:* Guadalajara.

Since this is a cosmopolitan species, perhaps the listing of localities has not much significance, unless geographical variation should be found to occur.

The green or bluish metallic gloss tends to disappear in older specimens; a series of 20 from Jalisco, two from Baja California, one from Coahuila, and five from Mazatlan, Sinaloa, all of which were collected in 1901 or earlier, show a predominance of dull brown either at the apex of the elytra, on the entire elytra, or on the entire upper surface. The brown, however, has traces of metallic gloss. Recently collected specimens from northern Mexico are entirely glossy green above.

The many synonyms of this species are given by Wolcott (1947) and Barr (1950).

REFERENCES CITED

Barr, W. F.

1950. Contributions toward a knowledge of the insect fauna of Lower California. No. 12. Coleoptera: Cleridae. Proc. California Acad. Sci., vol. 24, pp. 485–519.

1952a. New species of *Cymatodera* from the southwestern United States and northern Mexico (Coleoptera; Cleridae). Amer. Mus. Novitates, no. 1572, pp. 1–9.

1952b. A revision of the species belonging to the new clerid genus *Araeodontia* (Coleoptera). *Ibid.*, no. 1573, pp. 1–17, figs. 1–7.

CORPORAAL, J. B.
1942. Cleridae (Col.). Beitr. Fauna Perus, vol. 2, pp. 135–147.
1950. Cleridae. *In* Hincks, W. D., Coleopterorum catalogus. Supplementa. The Hague, pt. 23, pp. 5–373.
GORHAM, H. S.
1882. Biologia Centrali-Americana. Cleridae. London, vol. 3, pt. 2, pp 129–193, pls. 7–10, 12, 13.
1886. Biologia Centrali-Americana. London, suppl., vol. 3, pt. 2, pp. 332–346.
HORN, G. H.
1885. Contributions to the coleopterology of the United States. Trans Amer. Ent. Soc., vol. 12, pp. 128–162.
LINSLEY, E. G.
1936. Studies in the genus *Aulicus* Spinola (Coleoptera-Cleridae). Univ. California Publ. Ent., vol. 6, pp. 249–262, figs. 1–17.
SCHAEFFER, C.
1921. New species of North American clerid beetles of the genus *Aulicus*. Proc. U. S. Natl. Mus., vol. 59, pp. 151–159.
SCHENKLING, S.
1903. Coleoptera Malacodermata. Fam. Cleridae. *In* Wytsman, P., Genera insectorum. Brussels, vol. 13, pp. 1–124, pls. 1–5.
1906. Die Cleriden des Deutschen Entomologischen National Museums, nebst Beschreibungen neuer Arten. Deutsche Ent. Zeitschr., pp. 241–320, 1 pl.
1910. Cleridae. *In* Junk, W., Coleopterorum catalogus. Berlin, vol. 10, pt. 23, pp. 1–174.
SPIETH, H. T.
1950. The David Rockefeller Mexican Expedition of the American Museum of Natural History, introductory account. Amer. Mus. Novitates, no. 1454, pp. 1–67, figs. 1–52.
SPINOLA, M.
1844. Essai monographique sur les clérites, insectes coléoptères. Geneva, vol. 1, pp. 1–386, pls. 1–47.
WICKHAM, H. F., AND A. B. WOLCOTT
1912. Notes on Cleridae from North and Central America. Bull. State Univ. Iowa, vol. 6, pp. 49–67.
WOLCOTT, A. B.
1909. The Cleridae of the Public Museum of the city of Milwaukee. Bull. Wisconsin Nat. Hist. Soc., vol. 7, pp. 93–102.
1910. Notes on some Cleridae of Middle and North America with descriptions of new species. Field Mus. Nat. Hist., zool. ser., vol. 7, pp. 339–401, pls. 5–6.
1922. New species of Coleoptera of the tribe Clerini, with notes on others. Trans. Amer. Ent. Soc., vol. 48, pp. 67–78.
1947. Catalogue of North American beetles of the family Cleridae. Fieldiana: Zool., vol. 32, pp. 61–105.